AMENDMENT TO THE CLAIMS:

1-4. (cancelled)

5.(previously presented): A distortion compensation method for correcting distortion of a transmission power amplifier in a radio apparatus, comprising:

storing, in memory, distortion compensation coefficients for correcting distortion of the transmission power amplifier, each of which conforms to a transmit signal and a past transmit signal proceeding the transmit signal;

converting a transmit signal to a quadrature signal composed of an in-phase component and a quadrature component;

reading a distortion compensation coefficient, which conforms to a present transmit signal and a past transmit signal, out of the memory in complex form;

applying distortion compensation processing to said quadrature signal by adding a real part and an imaginary part of said distortion compensation coefficient to each of the signal components of said quadrature signal;

applying quadrature modulation to the distortion-compensated quadrature signal, amplifying the quadrature-modulated signal by the transmission power amplifier and transmitting the amplified signal;

eliminating phase rotation, which has been produced by said amplifier, from an output signal of the transmission power amplifier;

demodulating the signal from which said phase rotation has been eliminated; and

updating the real part and the imaginary part of said distortion compensation coefficient in such a manner that a difference between in-phase components and a difference

84085332_1

2

between quadrature components of the quadrature signal before distortion compensation and of the demodulated signal will become zero.

6.(currently amended): A distortion compensation method according to claim ~~1 or 2~~ 5, comprising one distortion compensation coefficient, which corresponds to a present transmit signal and a plurality of signals transmitted in the past, is read out of the memory and distortion compensation processing is executed.

7.(currently amended): A distortion compensation method according to claim ~~1 or 2~~ 5, wherein one distortion compensation coefficient that corresponds to two signals, namely a present transmit signal and a signal transmitted previously, is read out of the memory and distortion compensation processing is executed.

8. (original): A distortion compensation method according to claim 7, wherein a distortion compensation coefficient, which corresponds to a combination of a present transmit signal and a difference between the present signal and a signal transmitted previously, is read out of the memory and distortion compensation processing is executed.

9-10. (cancelled)

11.(currently amended): A distortion compensation method according to claim ~~1 or 2~~ 5,

wherein a distortion compensation coefficient, which corresponds to an amplitude value of a present transmit signal and an amplitude value of a signal transmitted in the past, is read out of the memory and distortion compensation processing is executed.

12-19. (cancelled)

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4

PAGE 7/8 * RCVD AT 10/25/2005 2:53:59 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-6/25 * DNIS:2738300 * CSID:2129407049 * DURATION (mm-ss):02-52